

Note: This proposal basically just concurs with one submitted by Karl.

CUBIT Capability Proposal

Technical Area

Geometry, Meshing, Infrastructure, GUI, Graphics, etc..

Technical Lead

Cubit Developer in charge of technical area

MBG (Converting MBG to NURBS)	Michael Brewer
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MRD Description

Describe the capability in terms of how a user would see it.

The ability to convert MBG using into a NURBS (or other appropriate representation) which can then be modified by existing Cubit Tools.

SRS Description

What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

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| <ol style="list-style-type: none">1. Research existing software: If we can find a third-part supplier with a product that meets our needs, we purchase there product. Otherwise, we move to task 2.2. Research existing techniques: Determine whether NURBS is really the representation that we want to pursue and which algorithms we want implement.3. Implement Algorithms needed to convert a Facet representation into a Spline(-type) of Geometry. Individual steps will be dependent on the result of step 2. |
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Justification

Describe why this is important and what impact it will have if it is implemented. (or not implemented).

This approach would provide an alternative to the MBG-Modify capabilities that we have been trying to make robust. Progress on those capabilities has been slow, and there is little indication that the rate of progress will be significantly improved in the near future. Many of the same types of problems are likely to be seen with the approach proposed here. However, we should be able to create the geometry representation, and there are robust tools for modifying that geometry. Decomposing the resulting geometries is still likely to be more difficult than decomposing typical CAD geometries.

Resources

Who will work on this

Time estimate

How much time will it take in man-weeks

Targeted Release

10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)

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Submitted By:

Michael Brewer	3/28/2006
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Date: